REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in view of the following remarks is respectfully requested.

Claims 17-19 and 33-41 are presently active in this case. Claim 17 has been amended and claims 33-41 have been added by the present amendment. No new matter has been added. See at least Figure 10B and page 61 lines 13 and 14 of the specification regarding support for newly added claims 33, 37, and 41. See at least FIG. 8B and page 53 lines 6-24 of the specification regarding support for newly added claim 34.

In the outstanding office action, claim 17 was rejected under 35 USC 112, second paragraph, as being indefinite; and claims 17-19 were rejected under 35 USC 102(e) as being anticipated by U.S. patent No. 6,501,128 to Otsuki.

In response to the 35 USC 112, second paragraph rejection, Applicants have amended claim 17 to clarify that a gate electrode is formed on a second base layer positioned between an emitter layer (or source layer) and a first base layer. No further rejection on this basis is therefore anticipated.

Briefly recapitulating, Claim 17 (as amended)[1] defines that the impurity concentration of a channel region between the emitter layer (or source layer) and the first base layer is constant along the gate insulating film, namely, in the channel length direction. For example, by way of non-limiting examples, in FIGS. 8A and 10A, the impurity concentration of the channel region CH formed in the base layers 51 and 53 between the emitter layer 44 and the base layer 42 is constant along the gate insulating film 46 (see also FIGS. 8B and 10C).

In contrast thereto, in Otsuki the impurity concentration of a well region 4a is constant only in part, as shown in FIGS. 2a and 2b and discussed at lines 19-25 of column 6 of the

[1] Support for claim 17 as amended can be found at least in FIGS. 8B and 10C and at lines 6-16 of page 53 and lines 7-16 of page 61 of the specification.

specification. That is, the Otsuki impurity concentration remains at a certain value for the offset length d and then decreases sharply in the other regions. Hence, Otsuki does not anticipate or render obvious the subject matter defined by claim 17, namely, that the impurity concentration along the gate insulating film of the channel region is constant between the emitter layer (or source layer) and the first base layer.

Further, and by way of non-limiting example, in FIG. 10C of the present application the impurity concentration of the channel region CH is sharply decreased at a portion adjacent to the emitter layer 44. When the channel region CH is formed by ion implantation, the impurity concentration profile will unavoidably be the profile shown in FIG. 10 even if the impurity concentration is intended to be constant over the entire channel region. Therefore, claim 17 of the present application reads not only the structure of FIG. 8B, but also that of FIG. 10C of applicants' specification. That is, the impurity concentration of the channel region between the emitter layer 44 and base layer 42 is constant substantially in the entire region. Otsuki, in contrast thereto, merely discloses that the impurity concentration is constant only in the offset length d.

For the foregoing reasons, Otsuki is not believed to anticipate or render obvious the subject matter defined by claim 17 of the present application. Dependent claims 18 and 19 are believed to be allowable for at least the same reasons as claim 17.

Newly added claim 34 of the present application defines that the impurity concentration of a channel region is substantially constant over the entire region in the direction along the gate insulating film, namely, in the channel length direction. For example (non-limiting), in FIG. 8A the impurity concentration of the channel region CH formed in the base layer 51 is constant over all regions from the region adjacent to the emitter layer 44 to the region adjacent to the base layer 42 (see also FIG. 8B).

In contrast thereto, in Otsuki the impurity concentration of a well region 4a is constant only in part, as shown in FIGS. 2a and 2b and discussed at lines 19-25 of column 6. That is, the impurity concentration remains at a certain value for the offset length d and then decreases sharply in the other regions.

Hence, Otsuki is not believed to anticipate or render obvious the subject matter defined by claim 34, namely, that the impurity concentration of the channel region is constant in every region in the channel length direction.

Newly added claim 38 defines that the impurity concentration along the gate insulating film of the channel region is constant substantially between a region adjacent to the second base layer and a region adjacent to the emitter layer or source layer. This structure corresponds, by way of non-limiting examples, to the channel region CH shown in FIGS. 8A and 10A of the present application. As discussed above regarding claim 17, Otsuki is not believed to anticipate or render obvious that structure.

Consequently, in view of the present amendment, no further issues are believed to be outstanding and the present application is believed to be in condition for allowance. An early and favorable action is therefore respectfully requested.

Respectfully submitted,

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